

EXHIBIT 21

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muscle, which changes the shape of the lens in focusing the eye.)

ciliary feeder *noun* ZOOL a mollusc which feeds by sucking water and the organisms it contains through cilia

ciliary ganglion *noun* ANAT a parasympathetic ganglion in the orbit of the eye, supplying the intrinsic eye muscles

ciliate, ciliated *adjective* BIOL having cilia

ciliated epithelium *noun* BIOL a simple epithelium where the cells have tiny hairs or cilia

cilium *noun* BIOL one of many tiny projections resembling hairs which move backwards and forwards and drive particles or fluid along (NOTE: The plural is **cilia**.)

CIM *abbreviation* COMPUT 1. computer input microfilm 2. computer-integrated manufacturing

cinders *plural noun* 1. CHEM hard pieces of material left when the flames from a burning substance have gone out 2. EARTH SCI the small pieces of lava and rock thrown up in a volcanic eruption

cinematics another spelling of **kinematics**

cinnamic acid *noun* CHEM a white odourless substance that is insoluble in water, used in perfumes. Formula: $C_6H_5CHCHCOOH$.

cipher *noun* COMPUT a system of transforming a message into an unreadable form with a secret code ○ *Always use a secure cipher when sending data over a telephone line.*

ciphertext *noun* COMPUT the data output from a cipher. Compare **plaintext**

CIR *abbreviation* COMPUT current instruction register

circadian *adjective* BIOL describes a pattern repeated approximately every 24 hours

circadian rhythm *noun* BIOL a rhythm of daily activities in plants and animals, repeating every twenty-four hours

circle *noun* MATHS a line forming a round shape

circuit *noun* ELEC a connection between electronic components that perform a function

circuit analyser *noun* ELEC a device that measures voltage, current, impedance or signal in a circuit

circuit board *noun* ELEC an insulating board used to hold components which are then connected together electrically to form a circuit. Also called **circuit card**

circuit breaker *noun* ELEC an electrical device used to interrupt an electrical supply when there is too much current flow

circuit capacity *noun* ELEC the information-carrying capacity of a particular circuit

circuit card *noun* COMPUT same as **circuit board**

circuit design *noun* COMPUT a layout of components and interconnections in a circuit

circuit diagram *noun* ELEC a graphical description of a circuit ○ *The CAD program will plot the circuit diagram rapidly.*

circuitry *noun* ELEC a system of electrical circuits ○ *In an anti-skid braking system, circuitry is employed which can detect individual wheel deceleration.* ○ *The circuitry is still too complex.*

circuit switching *noun* ELEC a design of communication system in which a path from sender to receiver is created when required rather than using a permanent, fixed line (NOTE: The normal telephone system is an example of a circuit switching network.)

circular *adjective* shaped like a circle ○ *Anodes are circular plates with centre holes.*

circular buffer *noun* a computer-based queue that uses two markers, for the top and bottom of the line of stored items (NOTE: The markers move as items are read from or written to the stack.)

circular file *noun* COMPUT a data file that has no visible beginning or end and each item points to the location of the next item with the last item pointing back to the first

circular list *noun* COMPUT a list in which each element contains data and an address to the next element in the list with the last item pointing back to the first

circular reference *noun* COMPUT an error condition that occurs when two equations in two cells reference each other

circular saw *noun* INDUST a saw with a circular action which moves in a circle

circular shift *noun* COMPUT a rotation of bits in a word with the previous last bit inserted in the first bit position

contribute

contribute *verb* to give or provide something as part of the whole ○ *Exhaust gases contribute to engine power.* ○ *I contributed a paper to a special issue of the journal.*

contribution *noun* something given or provided as part of a whole ○ *The differences in the effect of solar radiation on land and sea make the biggest contribution to weather and climate.*

contributor *noun* a person or thing that contributes to something ○ *She was a contributor to the seminar.* ○ *The ozone effect is a major contributor to the division of the lower atmosphere into two layers.*

control *noun* **1.** the action of directing or working in a specific way **2.** the process of restraining something or keeping something in order □ **to bring or keep something under control** to make sure that something is well regulated ○ *The authorities brought the epidemic under control.* □ **out of control** unregulated ○ *The epidemic appears to be out of control.* **3.** (in experiments) a sample used as a comparison with the one being tested **4.** COMPUT a section of a computer or device which carries out instructions and processes signals **5.** a key on a computer keyboard which sends a control character ■ *verb* to make a machine, system or procedure work in a specific way ○ *The purpose of the centrifugal switch is to control the starting and ignition circuits.*

control area *noun* an area where controls are operating to prevent the spread of a disease within the area, usually a larger area than the infected area

control block *noun* COMPUT a reserved area of computer memory that contains control data

control bus *noun* COMPUT a set of connections to a microcomputer that carry the control signals between CPU, memory and input/output devices

control cable *noun* AVIAT a metal wire linking a pilot's cockpit controls to control surfaces such as the elevators and ailerons

control character *noun* COMPUT a special character that provides a control sequence rather than an alphanumeric character

control computer *noun* COMPUT a dedicated computer used to control a process or piece of equipment

control cycle *noun* COMPUT the events required to retrieve, decode and execute an instruction stored in memory

control data *plural noun* data that control the actions of a device

control driven *adjective* COMPUT referring to instructions that are executed once a control sequence has been received by a computer

control field *noun* COMPUT the storage area for control instructions

control gene *noun* GENETICS a gene that regulates the development and specialisation of cells

control group *noun* a group of organisms or substances that are not being tested, but whose test data are used as a comparison

control instruction *noun* COMPUT a program instruction that controls the actions of a device ○ *The next control instruction will switch to italics.*

control language *noun* COMPUT a system of commands that identify and describe the resources required by a job that a computer has to perform

controlled experiment *noun* an experiment designed to test the effects of independent variables on a dependent variable by changing one independent variable at a time

controlled tipping *noun* ENVIRON the disposal of waste in special landfill sites

controller *noun* **1.** a device which ensures that something operates in the correct way ○ *the propeller speed controller* **2.** a person who manages systems to ensure the smooth operation of procedures **3.** COMPUT a hardware or software device that controls a peripheral such as a printer or monitors and directs data transmission over a local area network

control memory *noun* COMPUT a memory that decodes control instructions into microinstructions that operate a computer or microcontroller

control mode *noun* COMPUT the state of a device in which control signals can be received to select options or functions

Control of Substances Hazardous to Health (UK Regulations) *noun* full form of COSHH

control panel *noun* COMPUT **1.** the control switches and status indicators of a main computer system **2.** a utility that dis-

converge *verb* to move towards, come together or meet at a point ○ *Meridians converge towards the poles.* Opposite **diverge**

convergence *noun* 1. the movement towards or the act of coming together or meeting at a point ○ *There is convergence of meridians of longitude at the North and South Poles.* 2. COMPUT the combination of two or more technologies to produce a new technology (NOTE: Fax machines are the product of convergence of telephone, scanning and printing technologies.) 3. COMPUT the accuracy with which the picture beam strikes the three colour dots that form each colour pixel 4. METEOROL a phenomenon that occurs whenever there is a net inflow of air into a region of the atmosphere, resulting in the accumulation of air and an increase in density. Compare **divergence** 5. EARTH SCI the process that occurs in an ocean when warm surface water meets cold polar surface water and starts to cool and sink

convergence zone *noun* EARTH SCI the area of an ocean in which convergence occurs

conversational mode *noun* COMPUT a computer system that provides immediate responses to a user's input

converse *noun* the opposite □ **warm air rises – the converse is also true** in other words, cool air descends ■ *verb* to have a conversation

conversion *noun* COMPUT a change from one system to another

conversion factor *noun* a formula or figure used for conversion of units, e.g. of temperatures or distances, from one system to another ○ *The conversion factor for converting UK gallons to litres is: x 4.546.*

convert *verb* to change something to a different system, set of rules or state ○ *How do you convert degrees C into degrees F?* ○ *Photochemical reactions convert oxygen to ozone.* ○ *She has converted her car to take LPG.*

converter *noun* 1. a device which alters the form of something ○ *A backup converter converts the alternating current power into direct current.* 2. COMPUT a device or program which translates data

from one form to another ○ *The converter allowed the old data to be used on the new system.*

convertibility *noun* the ability to be changed

convertible *adjective* easily changed to fit in with a new system or set of standards ○ *The statute mile, unlike the nautical mile, is not readily convertible into terms of angular measurement.*

convex *adjective* curved outwards like the outer surface of a sphere or ellipsoid

convey *verb* to pass, carry or move something from one place to another ○ *A large number of tubes convey the cooling medium through the matrix.*

cookie *noun* COMPUT a tiny file stored on a computer when connected to a remote Internet site using a browser (NOTE: A cookie is used by the remote site to store information about options which can be read when the site is next visited.)

cool *adjective* rather cold ■ *verb* to make or become less hot ○ *The airflow is used to cool the oil.*

coolant *noun* 1. CHEM, MECH ENG a substance used to cool something such as an engine 2. INDUST a substance used to take the heat generated from a nuclear power station to the boilers ○ *Ordinary water is used as coolant in some types of nuclear reactor.*

cooler *noun* a device for cooling something ○ *A self-contained system, consisting of an oil tank, pump, filter, cooler, and oil jets, lubricates the auxiliary power unit.*

cooling *noun* the action of making something cool ○ *the cooling of the oil by the airflow* ■ *adjective* making cool

cooling medium *noun* CHEM a substance which reduces the temperature of another substance or material

cooling pond *noun* INDUST 1. a part of a nuclear reactor where irradiated elements are cooled 2. a part of an industrial process where water is allowed to cool in the open air

cooling tower *noun* INDUST a tall tower for cooling the water used in industrial processes such as at power stations

cooling water *noun* the water used to make something less hot, e.g. the irradiated elements from a nuclear reactor or the engine of a machine

coombe *noun* another spelling of **combe**

regime

Dynamic RAM is regenerative memory which needs to be refreshed every 250ns.

regime *noun* a general pattern or system
○ *a strict dietary regime* ○ *The two rivers have very different flow regimes: one has rapid flow down from high mountains, while the other is slower and mainly crosses fertile plains.*

region *noun* 1. EARTH SCI a large area of land with distinct geographic, political, or biological characteristics ○ *the polar regions* ○ *The troposphere is deepest over equatorial regions and shallowest near the Poles.* 2. an area of a surface ○ *the outer region of the stained area* □ **in the region** of approximately ○ *The burning temperature of the fuel is in the region of 2000° C.* 3. COMPUT a special or reserved area of memory, program or screen

regional breakpoint *noun* COMPUT a breakpoint that can be inserted anywhere within a program that is being debugged

region fill *noun* COMPUT the filling of an area of a screen or a graphics shape with a particular colour

register *noun* COMPUT a reserved memory location within a central processing unit, usually one or two words wide, that is used to hold data and addresses to be processed in a machine code operation ■ **verb** 1. to show or display information or data ○ *Several lakes have registered a steady increase in acidity levels until their natural fish populations have started to decline.* ○ *The earthquake registered 6.2 on the Richter scale.* 2. to make something known formally or officially ○ *We registered our concern about the procedure.* ■ *noun* an official record, or a list of items ○ *a register of authorized users*

regolith *noun* EARTH SCI a layer of weathered rock fragments which covers most of the Earth's land area

regress *verb* ENVIRON, BIOL to return to a more primitive earlier state

regression *noun* ENVIRON, BIOL the process of returning to a more primitive earlier state, e.g. when cultivated land returns to a wild state

regressive *adjective* EARTH SCI (of a water level) getting lower

regulate *verb* to control a process or activity

regulated power supply *noun* ELEC a constant controlled voltage source of cur-

rent whose output will not vary with input supply variation

COMMENT: A regulated power supply is required for all computers where components cannot withstand voltage variations.

regulation *noun* 1. the control of a process or activity 2. a rule ○ *The pamphlet lists the regulations concerning visits to nature reserves.*

regulator *noun* 1. something or someone controlling a process or activity 2. ELEC a device used to limit the current and voltage in a circuit ○ *Regulators allow the correct charging of batteries from solar panels and wind generators.*

regulator gene *noun* GENETICS a gene that modifies the action of one or more structural genes, thus controlling the synthesis of their corresponding proteins

regulatory *adjective* controlling a process or activity according to specific rules ○ *a regulatory body*

regurgitate *verb* ZOOL to bring undigested or partially digested food up from the stomach to the mouth, as some birds and animals do to feed their young

reheat *verb* PHYS to heat something again ○ *Water that has been cooled and condensed after passing through the boilers is sent back to the boilers for reheating.*

reheater *noun* INDUST a section of a power station where steam which has been used to turn the first turbine is heated again to create enough pressure to turn the second turbine

rehydration *noun* MED the giving of water or liquid to a patient suffering from dehydration

Reid vapour pressure test *noun* PHYS a test to determine the pressure required above a liquid to hold the vapours in the liquid at a given temperature

reinforce *verb* to strengthen something ○ *Typical skin materials used in aircraft are made from epoxy resins which are reinforced with glass, carbon or Kevlar fibres.*

reinforced *adjective* strengthened

reinforced concrete *noun* CONSTR concrete with steel rods embedded in it for extra strength, used in the construction of large buildings

reinforced plastic *noun* INDUST, AVIAT plastic used with glass fibres to repair some types of aircraft structure

reinforcement *noun* 1. the act of strengthening something 2. a strengthened

symmetrical, symmetric *adjective* with an exact likeness of form on opposite sides of a central dividing line ○ *The area covered by the forecast is divided into a series of grid or reference points at approximately 300km symmetrical spacing.*

symmetrical compression *noun* COMPUT a compression system that requires the same processing power and time scale to compress and decompress an image

symmetric difference *noun* MATHS a logical function whose output is true if either of two inputs is true, and false if both inputs are the same

symmetry *noun* an exact matching in position or form of points on an object that are equally positioned about a given point, line or plane bisecting the object

sympathetic nervous system *noun* ANAT one of two complementary parts of the nervous system that affects involuntary functions. Compare **autonomic nervous system** (NOTE: It is activated by danger or stress and causes responses such as dilated pupils and a rapid heart rate.)

sympile *noun* ECOL an insect or other organism that lives in the nests of social insects such as ants or termites and is fed by them

symphysis *noun* ANAT, BOT a point or line where a symphysis occurs

symptom *noun* 1. an indication of something 2. MED a change in the functioning or appearance of an organism, which shows that a disease or disorder is present

symptomatic *adjective* 1. characteristic or typical of something 2. MED referring to a medical symptom ○ *The rash is symptomatic of measles.*

syn- *prefix* joint or fused

synapse *noun* ANAT a point in the nervous system where the axons of neurons are in contact with the dendrites of other neurons ■ *verb* BIOL to link with a neuron

synaptology *noun* BIOL the study of junctions between nerve cells (**synapses**) and synaptic connections in the nervous system

synchronisation, synchronisation *noun* the action of synchronising two or more devices

synchronisation pulse *noun* ELEC a transmitted pulse used to make sure that the receiver is synchronised with the transmitter

synchronise, synchronise *verb* to cause things to occur or operate at the same time or rate

synchronised dynamic RAM *noun* COMPUT an enhanced memory component in which the memory access cycle is synchronised with the main processor clock, eliminating wait time between memory operations. Abbr **SDRAM**

synchronised sleep *noun* BIOL same as **slow-wave sleep**

synchronous *adjective* COMPUT being synchronised with something else such as a main clock

synchronous cache *noun* COMPUT a high-speed secondary cache system used in many computers that use the Pentium processor chip

synchronous computer *noun* COMPUT a computer in which each action can only take place when a timing pulse arrives

synchronous data link control *noun* COMPUT a data transmission protocol, most often used in IBM's Systems Network Architecture, that defines how synchronous data is transmitted. Abbr **SDLC**

synchronous network *noun* COMPUT a network in which all the links are synchronised with a single timing signal

synchronous transmission *noun* COMPUT the transmission of data from one device to another, where both devices are controlled by the same clock and the transmitted data is synchronised with the clock signal

synchrotron *noun* PHYS a particle accelerator in which charged particles travelling at near the speed of light are guided round a doughnut-shaped tube by powerful magnets, producing synchrotron radiation

synchrotron radiation *noun* PHYS short-wave radiation, from infrared to conventional X-rays, produced in a synchrotron. Use: analysis of the structure of proteins, viruses, and inorganic materials such as metals.

syncline *noun* EARTH SCI a concave downward fold of rock, with the youngest rock on the inside. Compare **anticline**

sync pulse *noun* ELEC a transmitted pulse used to make sure that the receiver is synchronised with the transmitter

syndrome *noun* MED a group of symptoms and other changes in an organism's functions which, when taken together,